DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

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STATE OF MONTANA

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DECISION NOTICE
ADOPTION OF EXISTING ENVIRONMENTAL REVIEW

Spring Coulee Headworks Replacement Project
November 2021
Greenfields Irrigation District
SE ¼ of Section 14, Township 22 North, Range 2 West. Latitude of 47.6587833° North and a Longitude of 111.8177194° West
Teton County

Existing Environmental Review Document: Bureau of Reclamation Final Finding of No Significant Impact Environmental Assessment

Type and Purpose of Action

The primary purpose of this project is to enhance the Greenfields Irrigation District's (GID's) ability regulate and manage flows in their irrigation system for the J-wasteway, the GM-100 irrigation canal, and Spring Coulee. The current configuration of the Spring Coulee headworks, an overflow mechanism for J-wasteway, does not allow the GID to regulate the water surface elevation of the J-wasteway and control the overflows conveyed to Spring Coulee. This results in significant volumes of water being permanently lost through Spring Coulee and not delivered to GID water users. The lost flows to Spring Coulee are not only large in volume but periodically surges are experienced that result in high velocities through Spring Coulee which consequently causes severe erosion to the stream banks. This eroded sediment is transported through Spring Coulee to Muddy Creek and the Sun River. The sediment pollution continually degrades the water quality in the already impaired Sun River. The replacement of the Spring Coulee headworks with a new structure with automated gates along with the increased operational capacity of J-wasteway, which would be achieved through the construction of an earthen berm, would mitigate the erosion in Spring Coulee. The erosion mitigation would occur through the enhanced management and operational flexibility provided by the proposed project to control flows into Spring Coulee. The project would also provide water conservation by preventing operational water losses into Spring Coulee that can be stored and released to GID users.

The proposed Spring Coulee headworks project is located on J-wasteway near the head of the Spring Coulee drainage. The project is specifically located within the SE ¼ of Section 14, Township 22 North, Range 2 West. The proposed project is located at a latitude of 47.6587833° North and a longitude of 111.8177194° West. The project is situated within the Muddy Creek Watershed, (Hydrologic Unit Code (HUC) 10030104).

Construction was set to begin November 2021 and complete by May 2022.

Explanation of the decision(s) that must be made regarding the proposed action (i.e. approve grant or loan and provide funding):

DNRC will approve the grant to provide funding for the GID – Spring Coulee Headworks Replacement Project.

Criteria for Adopting Existing Environmental Review

☒The existing environmental review covers an action paralleling or closely related to the proposed action.
☒The information in the existing environmental review is accurate and clearly presented.
☒The information in the existing environmental review is applicable to the action being considered.
☒All appropriate Agencies were consulted during preparation of the existing environmental review.
☒Alternatives to the proposed action evaluated as part of the existing environmental review effort.
☒The impacts of the proposed action been accurately identified as part of the existing environmental review.
☒The existing environmental review identifies any significant impacts as a result of the proposed action and those identified will they be mitigated below the level of significance.

Adopt

The existing environmental review can be considered sufficient to satisfy DNRC's MEPA review responsibilities. No further analysis needed.

Existing Analysis Reviewed By:	**Name:** Demi Blythe	**Date:** 1/13/2022
	Title: CARD Division MEPA/NEPA Coordinator	
	Email: Demitra.Blythe@mt.gov	

Approved By:	Name: Mark Bostrom	
	Title: CARD Division Administrator	
Signature: DocuSigned by: Mark W Bostrom BF7A1C50B2AF4DE...	**Date**: 1/13/2022 | 2:54:25 PM MST	

Environmental Checklist Instructions

Purpose of This Document:

All applicants must consider the potential environmental impacts of their projects. Consideration of these impacts on the location, design, or construction actions may help avoid expensive mitigation or construction costs. A project will not be eligible for funding if it results in significant adverse impact after mitigation.

DNRC requires compliance with the Montana Environmental Policy Act (MEPA) per state law and associated DNRC Administrative Rules (ARM 36.2.523). MEPA requires state agencies to prepare a detailed statement on any project, program, or activity directly undertaken by the agency; a project or activity supported through a contract, grant, subsidy, loan or other form of funding assistance from the agency; and a project or activity involving the issuance of a lease, permit, license, certificate, or other entitlement for use or permission by the agency (MCA Title 75, Chapter 1). All project applications will be subject to MEPA review followed by a public scoping process. DNRC will post the drafted MEPA decision for public comment at a minimum of two weeks (dependent on level of environmental impact). The MEPA document will then require a final decision by DNRC once funds are awarded.

Please complete the Environmental Checklist below as the information provided will be subject to a MEPA assessment by DNRC. If an Environmental Assessment has already been completed for the proposed project, please attach it to the application in place of this evaluation.

Instructions:

Complete the Environmental Checklist on the following pages after the instructions below. DNRC retains the ultimate decision-making authority on all MEPA decisions. If DNRC determines this section to be incomplete, additional information will be required before consideration for funding.

Example		
Impact Code	**Impact Type**	**Explanation of Impact to Resource**
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil lump, steep slopes, subsidence, seismic activity)		
☐ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	*Current Conditions:* *Preferred Alternative Environmental Narrative:*

1. **Impact Code:** In the first column, identify the impact that the preferred alternative will have on each resource (e.g. 1. Soil Suitability, Topographic and/or Geologic Constraints) in the project area. Select from the following impact codes:
   - *No Impact*: No impact to the resource is anticipated or this is not applicable to this project.
   - *Beneficial*: Potentially beneficial impact to the resource.
   - *Adverse*: Potentially adverse impact to the resource.

   Please note that a resource may have more than one impact. Identify all possible impacts to the resource in the space provided. For example, the preferred alternative may have a short-term direct negative impact and a long-term direct and indirect positive impact on the resource. Check all boxes that apply and use the space provided in the final column "Explanation of Impact to Resource" to explain.

Example		
Impact Code	**Impact Type**	**Explanation of Impact to Resource**
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil lump, steep slopes, subsidence, seismic activity)		
☐ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	*Current Conditions:* *Preferred Alternative Environmental Narrative:*

2. **Impact Type:** In the second column, identify the type(s) of impact to the resource from the preferred alternative. (Impacts may be direct, indirect or cumulative).
   - *Direct impacts*: Occur at the same time and place as the proposed project.
   - *Indirect or secondary impacts*: Occur at a different location or later time than the proposed project.
   - *Cumulative impacts*: Collective impacts on the environment when considered in conjunction with other past, present, and future actions related to the proposed project. Cumulative impact analysis includes a review of all state and nonstate activities that have occurred, are occurring, or may occur that have impacted or may impact the same resource as the proposed project.

   Just as above, please note that a resource may have more than one impact. Identify all possible impacts to the resource in the space provided. For example, the preferred alternative may have a short-term direct negative impact and a long-term direct and indirect positive impact on the resource. Check all boxes that apply and use the space provided in the final column "Explanation of Impact to Resource" to explain.

Example		
Impact Code	**Impact Type**	**Explanation of Impact to Resource**
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil lump, steep slopes, subsidence, seismic activity)		
☐ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	*Current Conditions:* *Preferred Alternative Environmental Narrative:*

3. **Explanation of Impact to Resource:** In the final column, use the space provided on the Environmental Checklist to summarize the following information:
   - ***a. Current Conditions***
     - Describe the current environmental resources of the affected area including the impact of no action. Your description of the current natural resources will provide a baseline to compare all alternatives and their associated environmental impacts.
   - ***b. Preferred Alternative Environmental Narrative:***
     - Describe the impact of the preferred alternative or ***indicate why there is no impact*** from the project.
     - Identify any reasonable cumulative impacts that may result from implementing the preferred alternative. Cumulative impacts are the collective impacts on the

environment when considered in conjunction with other past, present, and future actions related to the proposed project.

- If a potentially adverse impact is identified for the preferred alternative, the applicant must provide the following:
    - An analysis of the severity, duration, extent, and frequency of the impact. Please specify and describe the following:
        - Severity: negligible, minor, or major.
        - Duration: short-term or long-term.
        - Extent: local, regional, or statewide.
        - Frequency: non-recurring or recurring.
    - An explanation of short- and/or long-term measures to mitigate the impact with a discussion on the effects of those mitigative measures on the proposed project.
- Identify any required permits.

4. **Additional Information:** Underneath the table the following information must be provided:
    a. Cultural Survey Acknowledgement
    b. Sources of Information: Identify all sources consulted for the completion of the Environmental Checklist. Sources may include studies, plans, documents, or the persons, organizations, or agencies contacted for assistance.

Certain sections of this Environmental Checklist may require specialized knowledge. Please contact the necessary agencies if further specialized knowledge is needed and attach comments provided by those agencies to your application. Below are contacts for certain sections that may require additional review by other agencies:

- *Physical Environment,* ***Section #5*** **– Surface Water Quality** – Montana Department of Environmental Quality, (406) 444 - 3080.
- *Physical Environment,* ***Section #6*** **– Floodplains and Floodplain Management** – The Department of Natural Resources Water Resources Division, (406) 444 - 0860 or visit: http://dnrc.mt.gov/divisions/water/operations/floodplain-management.
- *Physical Environment,* ***Section #7*** **– Wetlands** – U.S. Department of the Army Corps of Engineers, (406) 441 - 1375 or montana.reg@usace.army.mil.
- *Physical Environment,* ***Section #9*** **– Vegetation and Wildlife Species and Habitats** – Montana Fish, Wildlife and Parks, Wildlife Office (406) 444 - 2612 or find your Regional Office at https://fwp.mt.gov/aboutfwp/contact-us.
- *Physical Environment,* ***Section #10*** **– Unique, Endangered, Fragile or Limited Environmental Resources** – U.S. Fish and Wildlife Service for consultation on potential impacts to endangered or limited plants, fish, or other wildlife, (406) 449 - 5225.
- *Human Environment,* ***Section #4*** **– Historic Properties, Cultural or Archaeological Resources –** Montana State Historic Preservation Office (SHPO), (406) 444 – 7718 or pebrown@mt.gov.

For assistance in preparing the Environmental Checklist, contact DNRC grant manager listed on grant application.

Environmental Checklist

Applicant Name: **Greenfields Irrigation District**

Project Title: **Spring Coulee Headworks Replacement Project**

Environmental Checklist Prepared by: On: 2/28/2020

Drew Pearson, E.S.	WWC Engineering
Name of Person 1	Organization
(406) 443-3962	dpearson@wwcengineering.com
Phone Number	Email
Click or tap here to enter text.	Click or tap here to enter text.
Name of Person 2	Organization
Click or tap here to enter text.	Click or tap here to enter text.
Phone Number	Email

Click or tap here to enter text.

List additional people above. Include organization, phone number and email for all.

Physical Environment		
Impact Code	**Impact Type**	**Explanation of Impact to Resource**
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil lump, steep slopes, subsidence, seismic activity)		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The existing channel banks are experiencing erosion when large flows and periodic surges of water are spilled over the Spring Coulee headworks. The no action alternative would result in continued erosion.* Preferred Alternative Environmental Narrative: *The proposed improvement from the Preferred Alternative would reduce soil erosion along the banks of Spring Coulee and benefit the water quality in Muddy Creek and the Sun River. The proposed project would allow the GID the ability to manage and reduce the flows conveyed to Spring Coulee and significantly reduce the soil erosion.*
2. Hazardous Facilities (example: power lines, hazardous waste sites, acceptable distance from explosive and flammable hazards including chemical/petrochemical storage tanks, underground fuel storage tanks, and related facilities such as natural gas storage facilities and propane storage tanks)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *There are no hazardous facilities located within the vicinity of the project area.* Preferred Alternative Environmental Narrative: *No hazardous facilities are located within the vicinity of the project area.*

<table>
<tr><td colspan="3">3. Surrounding Air Quality (example: dust, odors, emissions)</td></tr>
<tr><td>☐ No Impact
☐ Beneficial
☒ Adverse</td><td>☒ Direct
☐ Indirect
☐ Cumulative</td><td><u>Current Conditions:</u>
The current condition results in dust and air emissions from soil erosion that occurs along the channel banks as this material is deposited downstream, has no vegetation, and is picked up by winds and carried through the air.
<u>Preferred Alternative Environmental Narrative:</u>
The proposed project may have short-term direct impacts to air quality as dust may be produced during construction. However, it will be specified in the contract documents that if dust becomes excessive, it will be the responsibility of the contractor to apply water for dust control. Additionally, the short duration of the project will limit air quality issues to within that timeframe, approximately two months of construction. The proposed project will not have long-term impacts to air quality.

Severity: The severity of air quality impacts from the proposed project will be minor or negligible. Measures will be taken during construction to minimize dust pollution and other air quality issues.

Duration: Impacts to air quality will be limited to the construction duration. It is anticipated that construction will last approximately four months.

Extent: Impacts to air quality are expected to be localized and will only affect the immediate surrounding area of the construction site.

Frequency: The impacts to air quality are anticipated to be non-recurring and will only be seen during construction of the proposed project.

Short-term measures such as water application will be utilized during construction to limit dust pollution. Other short-term measures such as Best Management Practices will be utilized during construction to limit air quality issues. Long-term measures such as topsoil placement, revegetation/seeding, and other reclamation measures will be utilized to minimize long-term impacts to air quality.</td></tr>
<tr><td colspan="3">4. Groundwater Resources and Aquifers (example: quantity, quality, distribution, depth to groundwater, sole source aquifers)</td></tr>
<tr><td>☐ No Impact
☒ Beneficial
☐ Adverse</td><td>☐ Direct
☒ Indirect
☐ Cumulative</td><td><u>Current Conditions:</u>
The current condition has moderate positive impacts to groundwater resources by providing a source of recharge to the local aquifer.
<u>Preferred Alternative Environmental Narrative:</u>
The proposed improvements would have a positive impact on the groundwater resources in the area. The project would expand the operational capacity of J-wasteway, which would help recharge the groundwater aquifer.</td></tr>
</table>

5. Surface Water/Water Quality, Quantity and Distribution (example: streams, lakes, storm runoff, irrigation systems, canals)		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition results in sometimes severe impacts to water quality through downstream erosion of the channel banks in Muddy Creek, which carries this water to the Sun River, which is an impaired water body.* Preferred Alternative Environmental Narrative: *Implementation of the Preferred Alternative would minimize erosion and sediment pollution into Muddy Creek and the Sun River, therefore improving water quality. The reduction in flows to Spring Coulee would reduce the erosion that is currently occurring.*
6. Floodplains and Floodplain Management (Identify any floodplains within one mile of the boundary of the project.)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The project does not lie within a floodplain.* Preferred Alternative Environmental Narrative: *Construction activities would not impact the floodplain.*
7. Wetlands (Identify any wetlands within one mile of the boundary of the project and state potential impacts.)		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *A search of the National Wetlands Inventory (NWI) website identified multiple wetland areas in the J-wasteway area. The NWI map is included in Appendix A of the Technical Presentation and shows the wetland locations in relation to the Project Area. These wetlands are classified as either freshwater ponds or freshwater emergent that are seasonally flooded, contain vegetation for most of the year, and contain hydrophytic plants.* Preferred Alternative Environmental Narrative: *The expansion of the J-wasteway footprint would develop additional wetland area through additional shoreline. Construction activities would take place in the irrigation offseason when the irrigation canals and J-wasteway are dry, so the wetlands would not be negatively impacted.* *Short-term measures such as the utilization of BMPs during construction will be used to minimize any impacts to wetland areas. Long-term measures such as topsoil placement, revegetation/seeding, and other reclamation measures will be used to minimize impacts to wetlands.* *No disturbance of the existing wetland areas would not occur through construction of the preferred alternative.*

8. Agricultural Lands, Production, and Farmland Protection (example: grazing, forestry, cropland, prime or unique agricultural lands) Identify any prime or important farm ground or forest lands within one mile of the boundary of the project.		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition provides limited benefits to agricultural lands and production through delivery of irrigation water. However, farmland protection is impacted through erosion of the downstream channel banks which takes away productive farmland.* Preferred Alternative Environmental Narrative: *The proposed project would allow the GID to more efficiently and reliably reduce flows to Spring Coulee and conserve this water with the delivery system. The conserved water would be stored in Gibson and Willow Creek Reservoir and released later in the irrigation season to boost crop development and yields.*
9. Vegetation and Wildlife Species and Habitats, Including Fish (example: terrestrial, avian and aquatic life and habitats)		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition provides negative impacts to vegetation and wildlife species and habitats through the impairment of water quality due to erosion.* Preferred Alternative Environmental Narrative: *The proposed project would improve the water quality in Muddy Creek and the Sun River by reducing erosion in Spring Coulee. Improved water quality would lead to improved vegetation and habitats for aquatic species.* *During normal irrigation seasons when the GID can provide water users their full water allotment, the volume of conserved water as a result of this project, would be able to be released back to the Sun River and improve the habitats for fish and other aquatic species along 80 miles of the river.*
10. Unique, Endangered, Fragile, or Limited Environmental Resources, Including Endangered Species (example: plants, fish or wildlife)		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *A search was performed for the proposed project area to obtain information on species of concern within the project area. The search indicated that, within the project township, there are no plant species of concern and two animal species of concern that include the Grizzly Bear (mammal) and Northern Redbelly Dace (fish).* Preferred Alternative Environmental Narrative: *The implementation of the preferred alternative would effectively minimize erosion, improve water quality, and improve riparian habitat for these species of concern. Snapshots of the Sage Grouse Core Area Website showing the proposed headworks structure and J-wasteway improvements are outside of the EO area are provided in Appendix C of Step 4.*
11. Unique Natural Features (example: geologic features)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The construction area contains no unique natural features that will be impacted by the proposed project.* Preferred Alternative Environmental Narrative: *The construction area contains no unique natural features that will be impacted by the proposed project.*

12. Access to, and Quality of, Recreational and Wilderness Activities, Public Lands and Waterways, and Public Open Space		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition allows for the waste of irrigation water which results in an expedited drawdown of the Gibson, Pishkin and Willow Creek Reservoirs.* Preferred Alternative Environmental Narrative: *The proposed project would conserve water by significantly reducing waste flows into Spring Coulee and allowing this water to be stored in Gibson and Willow Creek Reservoirs. These reservoirs are used for recreational activities and the additional water that would be stored later into the summer would enhance these recreational activities. The recreational and fishing opportunities along the Sun River would benefit from the preserved water quality through the reduced sediment pollution.*
Human Environment		
Impact Code	**Impact Type**	**Resource**
1. Visual Quality – Coherence, Diversity, Compatibility of Use and Scale, Aesthetics		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition for visual quality is an irrigation structure.* Preferred Alternative Environmental Narrative: *The proposed project would not affect visual quality.*
2. Nuisances (example: glare, fumes)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *There are no nuisances in the project area.* Preferred Alternative Environmental Narrative: *No nuisances would be created by the proposed project.*
3. Noise – Suitable Separation Between Housing and Other Noise Sensitive Activities and Major Noise Sources (example: aircraft, highways and railroads.)		
☐ No Impact ☐ Beneficial ☒ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition does not emit major noise sources, only water flowing over the irrigation structure.* Preferred Alternative Environmental Narrative: *Noise will only be created during the short-term construction period. Noise will be limited to approximately 4 months.* *Severity: Noise will be consistent with typical construction noise, which will be minor or major depending on the particular construction activity.* *Duration: Noise will be limited to the four-month construction duration.* *Extent: Noise will be localized to just the project area and the immediate surroundings which is located in a rural environment.* *Frequency: During construction the noise will be recurring. Once complete, noise will not be an issue.* *Wherever possible, the contractor will minimize noise and steps will be taken to reduce noise impacts to the surrounding area.*

4. Historic Properties, Cultural, and Archaeological Resources***(Please see end of Environmental Checklist for details if Cultural Survey has not been performed per SHPO Section 106)*		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *There are no historic properties, cultural, or archaeological resources that have been identified within the project area.* Preferred Alternative Environmental Narrative: *The GID would take the proper precaution to eliminate impacts to these resources if they are discovered during construction to be in the area.*
5. Changes in Demographic (Population) Characteristics (example: quantity, distribution, density)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no impact on demographic characteristics in the area.* Preferred Alternative Environmental Narrative: *No changes in demographic characteristics are anticipated due to the nature of the project.*
6. General Housing Conditions – Quality, Quantity, Affordability		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no impact on general housing conditions.* Preferred Alternative Environmental Narrative: *The proposed project would not impact general housing conditions.*
7. Businesses or Residents (example: loss of, displacement, or relocation)		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition has no impact on local businesses or residents.* Preferred Alternative Environmental Narrative: *No businesses or residents would be affected as a result of the proposed project. However, the project would provide an increase in crop production revenue, which would positively impact the local economy.*
8. Public Health and Safety		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition is unsafe for GID personnel as they must traverse a narrow structure over water without any safety rails or protection to operate the headgates.* Preferred Alternative Environmental Narrative: *The proposed project includes the addition of a walkway with handrails. As a result, GID staff would efficiently and safely be able to maintain the gate without the risk of falling or structural failure.* *The large water surges and severe erosion along the bank of Spring Coulee would be significantly reduced through implementation of the project. This would protect residents traversing along the banks along with livestock and wildlife using the drainage to access water.*
9. Local Employment – Quantity or Distribution of Employment, Economic Impact		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on local employment.* Preferred Alternative Environmental Narrative: *Short-term construction jobs will be created during construction of the proposed project. Additionally, the project will benefit local shops, gas stations, trucking companies, suppliers, etc. The project will also maximize crop production for the users of the system, resulting in maximized agricultural revenue for the GID and its users.*

10. Income Patterns – Economic Impact		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on income patterns.* Preferred Alternative Environmental Narrative: *The project will also maximize crop production for the users of the system, resulting in maximized agricultural revenue for the GID and its users. Increased revenue in the area could potentially filter down into the local economy, providing a potential economic boost.*
11. Local and State Tax Base and Revenues		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on local and state tax base and revenues.* Preferred Alternative Environmental Narrative: *The proposed improvements may have a positive impact on the tax base and revenues through increased crop yields and agriculturally based revenues.*
12. Community and Government Services and Facilities (example: educational facilities; health and medical services and facilities; police; emergency medical services; and parks, playgrounds and open space)		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on community and government services and facilities.* Preferred Alternative Environmental Narrative: *Potential indirect benefits to the local schools, health and medical services and facilities, and parks, playgrounds and open space could be realized from the increase in taxes on agricultural production.*
13. Commercial and Industrial Facilities – Production and Activity, Growth or Decline		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on commercial and industrial facilities.* Preferred Alternative Environmental Narrative: *No impacts to commercial and industrial facilities are anticipated as a result of the proposed project.*
14. Social Structures and Mores (example: standards of social conduct/social conventions)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on social structures and mores.* Preferred Alternative Environmental Narrative: *It is anticipated that the proposed project will not affect social structures in the area.*
15. Land Use Compatibility (example: growth, land use change, development activity, adjacent land uses and potential conflicts)		
☐ No Impact ☒ Beneficial ☐ Adverse	☒ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition limits land use compatibility through the significant erosion that occurs downstream along the banks of Muddy Creek. Adjacent lands are being eroded by the flows within Muddy Creek that takes away fertile farmland.* Preferred Alternative Environmental Narrative: *The proposed project would conserve water and more reliably supply water to users of the GID system especially during periods of drought. The GID supplies irrigation water to 83,230 acres.*

16. Energy Resources – Consumption and Conservation		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on energy resources.* Preferred Alternative Environmental Narrative: *No impacts to energy resources are anticipated as a result of the proposed project.*
17. Solid Waste Management		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on solid waste management.* Preferred Alternative Environmental Narrative: *No impacts to solid waste management are anticipated as a result of the proposed project.*
18. Wastewater Treatment – Sewage System		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on wastewater treatment.* Preferred Alternative Environmental Narrative: *No impacts to wastewater treatment systems are anticipated as a result of the proposed project.*
19. Storm Water – Surface Drainage		
☐ No Impact ☐ Beneficial ☒ Adverse	☒ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition results in significant erosion to the banks of Muddy Creek downstream of the structure due to the inability to regulate flows that results in the surging of flows to the downstream system.* Preferred Alternative Environmental Narrative: *Potential impacts to storm water may occur during the construction of the proposed project. Erosion control and potential impacts to surface drainage during construction will be managed using BMPs to protect nearby surface waters.* *Severity: Impacts to storm water are expected to be negligible.* *Duration: Any potential impacts to storm water will be limited to the duration of construction. Construction is anticipated to last four months.* *Extent: Potential storm water impacts are expected to be limited to the project area. Impacts will be localized.* *Frequency: Storm water impacts will be non-recurring.* *Short-term measures such as BMPs will be utilized during construction to minimize impacts to storm water and surface drainage. Long-term measures such as revegetation, seeding, and reclamation will be utilized post construction to ensure that there are no long-term impacts to storm water and surface drainage.* *If construction related disturbance exceeds one acre, a Storm Water Pollution Prevention Plan (SWPPP) and permit may be needed for the project. If so, GID will work with the Engineer to obtain the necessary permits for storm water control.*

20. Community Water Supply		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on community water supply.* Preferred Alternative Environmental Narrative: *The proposed improvements will not impact community water supply.*
21. Fire Protection – Hazards		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on fire protection.* Preferred Alternative Environmental Narrative: *The proposed project will not impact fire protection.*
22. Cultural Facilities, Cultural Uniqueness and Diversity		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on cultural facilities, cultural uniqueness and diversity.* Preferred Alternative Environmental Narrative: *The proposed improvements will have no effect on cultural facilities, cultural uniqueness, or diversity. All environmental compliance documents required through the Bureau of Reclamation have been initiated and completed.*
23. Transportation Networks and Traffic Flow Conflicts (example: rail; auto including local traffic; airport runway clear zones – avoidance of incompatible land use in airport runway clear zones)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on transportation networks and traffic flow conflicts.* Preferred Alternative Environmental Narrative: *The proposed project will not affect transportation networks or create traffic flow conflicts in the area.*
24. Consistency with Local Ordinances, Resolutions, or Plans (example: conformance with local comprehensive plans, zoning, or capital improvement plans.)		
☒ No Impact ☐ Beneficial ☐ Adverse	☐ Direct ☐ Indirect ☐ Cumulative	Current Conditions: *The current condition has no effect on consistency with local ordinances, resolutions, or plans.* Preferred Alternative Environmental Narrative: *The proposed project will comply with all local ordinances, resolutions, and plans in design and construction.*
25. Private Property Rights (example: a regulatory action or project activity that reduces, minimizes, or eliminates the use of private property.)		
☐ No Impact ☒ Beneficial ☐ Adverse	☐ Direct ☒ Indirect ☐ Cumulative	Current Conditions: *The current condition results in severe erosion to the downstream banks for Muddy Creek that continues to erode away privately owned farmland.* Preferred Alternative Environmental Narrative: *The proposed improvements will not result in regulatory action on private property rights and will reduce impacts to private property by reducing downstream erosion and the loss of private property.*

Additional Information

****If no cultural survey has been performed, or is not expected to be needed, applicant must agree to the following statement:**

☒ I hereby agree that, to my knowledge, there are no cultural or paleontological materials in the

proposed project site. If previously unknown cultural or paleontological materials are identified during project related activities, the DNRC grant manager will be notified, and all work will cease until a professional assessment of such resources can be made.

List all sources of information used to complete the Environmental Checklist. Sources may include studies, plans, documents, or the individuals, organizations, or agencies contacted for assistance. For individuals, groups, or agencies, please include a contact person and phone number. List any scoping documents or meetings and/or public meetings during project development.

WWC Engineering (406) 443-3962

National Wetlands Inventory website, www.fws.gov/nwi/

FEMA Flood Map Service Center, https://msc.fema.gov/portal/search

GID – Erling A. Juel, P.E. (406) 467-2533

MTNHP Species of Concern, http://mtnhp.org/SpeciesOfConcern/?AorP=a

Montana Natural Heritage Program website; http://mtnhp.org/

DNRC Sage Grouse Habitat Conservation Program, https://sagegrouse.mt.gov/

NRCS Web Soil Survey https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Bing Aerial Photography

Google Earth

Below is a list of electronic resources available for data gathering to aid in the development of the Environmental Checklist:

Abandoned Mines (DEQ): https://deq.mt.gov/Land/abandonedmines/bluebook

Agricultural Statistics (USDA):
http://www.usda.gov/wps/portal/usda/usdahome?navid=DATA_STATISTICS

Air Quality

- Nonattainment Areas: http://deq.mt.gov/Air/airquality/planning/airnonattainmentstatus
- Citizens' Guide: http://deq.mt.gov/Air/airmonitoring/citguide

Army Corps of Engineers: http://www.usace.army.mil/Home.aspx

Bureau of Business and Economic Research, UM: http://www.bber.umt.edu/

Cadastral (for property ownership info): http://svc.mt.gov/msl/mtcadastral

Census Information, MT Dept. of Commerce: http://ceic.mt.gov

Conservation Districts, MT: http://macdnet.org/

Cultural Records

- Montana Historical Society: http://mhs.mt.gov/shpo/culturalrecords.asp

DEQ data search tools: http://svc.mt.gov/deq/dst/#/home

- Including Clean Water Act Info Center, Hazardous Waste Handlers, Petroleum Release Fund Claims, Unpermitted Releases, Underground Storage Tanks, Source Water Protection

EPA Enforcement and Compliance History Online http://echo.epa.gov/

Farmland Classification: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Fish (Also See Wildlife)

- Montana Fisheries Information System: http://fwp.mt.gov/fishing/mFish/
- Aquatic Invasive Species: http://fwp.mt.gov/fishAndWildlife/species/ais/speciesId/default.html

Floodplain Maps, FEMA: https://msc.fema.gov/portal

Geographic Information, Natural Resources Information System: http://nris.mt.gov/gis

Geologic Information - http://www.mbmg.mtech.edu/information/geologicmap.asp

Maps of Montana for species observations, land cover, wetland and riparian areas, land management: http://mtnhp.org/Tracker/NHTMap.aspx; http://mtnhp.org/mapviewer/?t=6

Montana Department of Transportation Environmental Manual: http://www.mdt.mt.gov/publications/docs/manuals/env/preface.pdf

Montana Board of Oil and Gas Conservation Information System: http://bogc.dnrc.mt.gov/webApps/DataMiner/

Plants

- Plant database, USDA Natural Resources Conservation Service: http://plants.usda.gov/java
- Plant Species, MT Field Guide: http://fieldguide.mt.gov/default.aspx
- Plant Species of Concern: http://mtnhp.org/SpeciesOfConcern/Default.aspx?AorP=p
- Threatened and endangered plants, USDA: http://plants.usda.gov/threat.html

Soils

- USDA Natural Resource Conservation Service database: https://websoilsurvey.nrcs.usda.gov/app/
- Montana soil and water conservation districts: http://swcdmi.org/

State Historic Preservation Office: http://mhs.mt.gov/Shpo

Tourism, UM – Institute of Tourism & Recreation Research: http://www.itrr.umt.edu

Tribal Resources:

- Blackfeet Tribal Environmental Permits: http://www.blackfeetenvironmental.com

- CSKT Natural Resources Department: http://nrd.csktribes.org/
- Montana Office of Indian Affairs: http://tribalnations.mt.gov/
- Tribal Historic Preservation Officer List http://nathpo.org/wp/thpos/find-a-thpo/ Vehicle Traffic Count (MDT): http://www.mdt.mt.gov/publications/datastats/traffic.shtml

Water

- Stream Record Extension Facilitator, USGS: http://pubs.usgs.gov/of/2008/1362/cd_links/WebPart.htm
- Streamstats basin characteristics, USGS: http://water.usgs.gov/osw/streamstats/
- Water Resources Division, DNRC: http://dnrc.mt.gov/divisions/water
- Water Rights Bureau, DNRC: http://dnrc.mt.gov/divisions/water/water-rights
- Water Right Query System, DNRC: http://nris.mt.gov/dnrc/waterrights/default.aspx Wetlands database, USFWS: http://www.fws.gov/wetlands/Data/mapper.html

Wild and Scenic Rivers: http://www.rivers.gov/montana.php

Wildlife

- Animal Species, MT Field Guide: http://fieldguide.mt.gov/default.aspx
- Animal Species of Concern: http://mtnhp.org/SpeciesOfConcern/Default.aspx?AorP=a
- Aquatic Invasive Species: http://fwp.mt.gov/fishAndWildlife/species/ais/speciesId/default.html
- Critical Habitat Mapper, USFWS: http://ecos.fws.gov/crithab/
- Crucial Areas Planning System/Habitat Assessment Tool: http://fwp.mt.gov/fishAndWildlife/conservationInAction/crucialAreas.html
- FWP Contact Map: http://fwp.mt.gov/gis/maps/contactUs/ (includes biologist responsibility areas)
- Maps and GIS Data, FWP: http://fwp.mt.gov/doingBusiness/reference/maps/
- Sage grouse management, FWP: http://fwp.mt.gov/fishAndWildlife/management/sageGrouse/
- Sage grouse habitat conservation program, DNRC: http://sagegrouse.mt.gov/
- Sage grouse habitat map: https://sagegrouse.mt.gov/ProgramMap

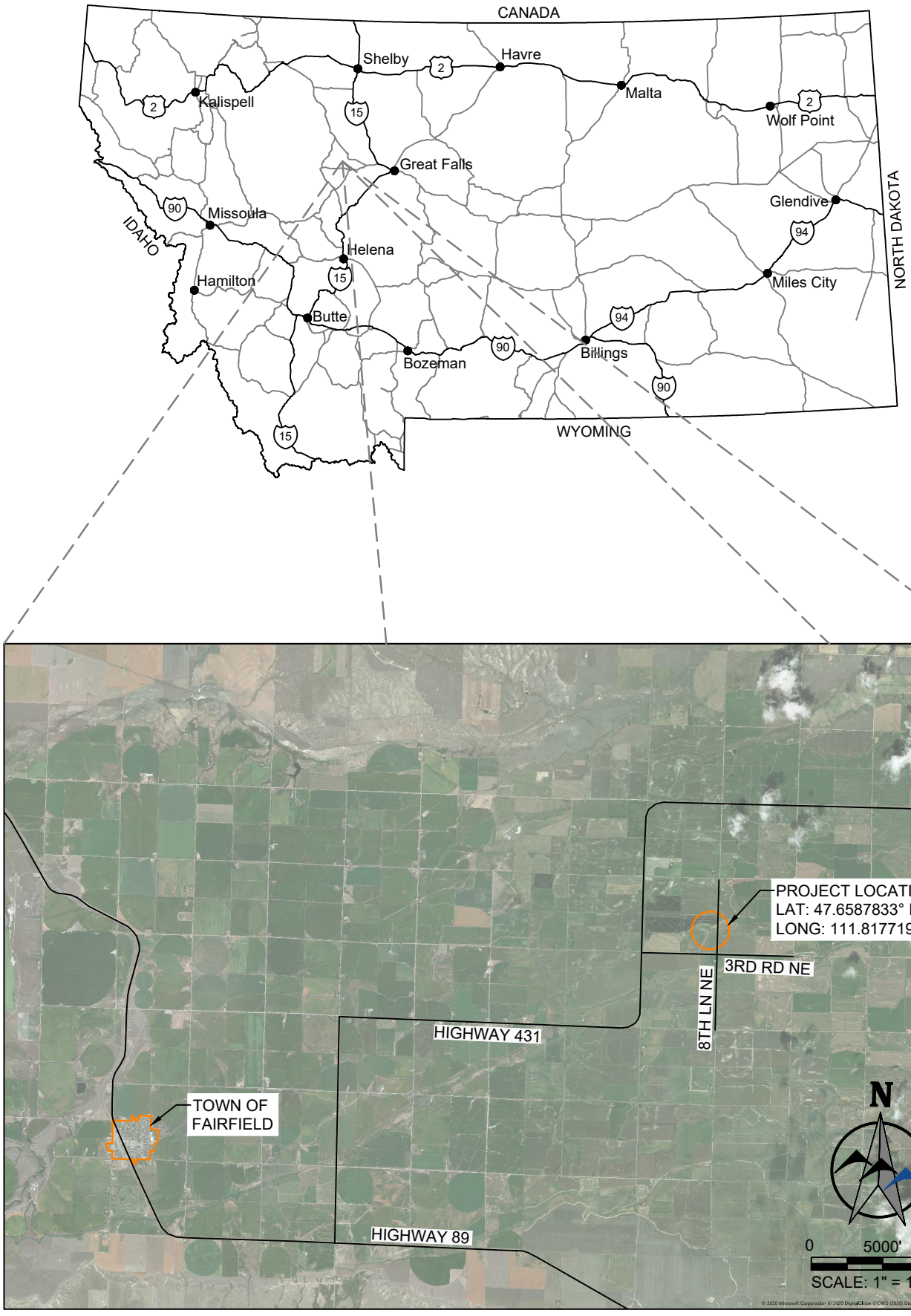


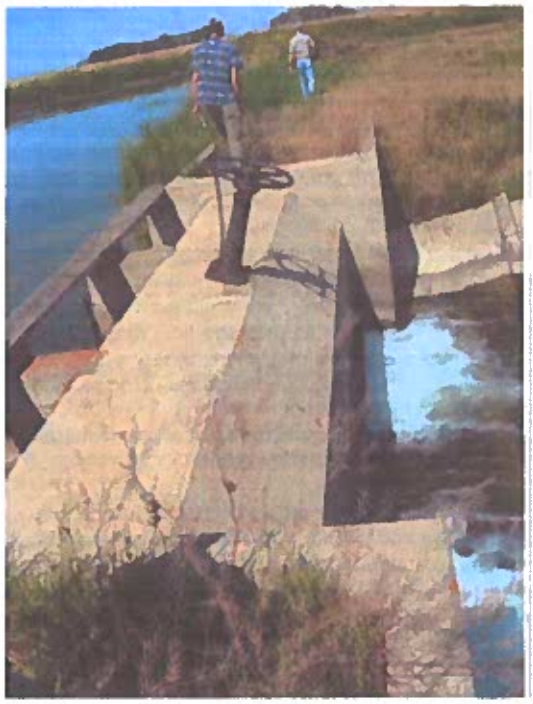
FIGURE 1. LOCATION MAP

RECLAMATION

Managing Water in the West

FINAL ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

J-LAKE IMPROVEMENT PROJECT



U.S. Department of the Interior
Bureau of Reclamation
Great Plains Region
Montana Area Office

November 2018

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT
J-LAKE IMPROVEMENT PROJECT
MT-222-19-01

FINDING

Based on the analysis of the environmental impacts as described in the Environmental Assessment (EA), the Bureau of Reclamation (Reclamation) finds that all potentially significant issues and resource impacts have been identified, evaluated, addressed, and resolved. In accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Council on Environmental Quality's Regulation for Implementing the Procedural Provisions of the NEPA (40 CFR Parts 1500-1508), Reclamation has determined that the proposed action will not have a significant impact on the quality of the human environment and that an Environmental Impact Statement is not warranted.

DECISION

Reclamation has decided to implement the Proposed Action Alternative as described in the J-Lake Improvement Project EA. Under this alternative, the purpose and need of this Federal action will be met and the J-Lake Improvement Project will be implemented. Implementation of this Federal action may proceed following approval of this environmental document.

SUMMARY OF ENVIRONMENTAL EFFECTS

Reclamation has analyzed the potential impacts associated with the No Action Alternative, and the Proposed Action Alternative as described in detail in the J-Lake Improvement Project EA. Implementation of the proposed action will not result in significant impacts to any resources. Effects of the Proposed Action alternative are summarized below:

Water Resources

Impacts to water quantity, water quality, and fisheries would be short-term for the duration of the construction period. Typical Best Management Practices (BMPs) will be applied to minimize potential impacts. Overall, the Proposed Project will provide a long-term benefit to water resources by providing a more efficient system and operational procedures that will reduce sediment to Muddy Creek and its tributaries.

Threatened and Endangered Species

The Proposed J-Lake Improvement Project would have no effect on the Canada lynx, red knot, piping plover, grizzly bear, wolverine, or whitebark pine, as none of these species are known to occupy the Project Area.

Cultural Resources

Reclamation conducted a cultural resource inventory of the Area of Potential Effects in 2014 – *Class III Cultural Resources Inventory of Greenfields Irrigation District J-Lake Wasteway Project, Teton County, Montana*. This report documents the determination that the undertaking (Proposed Action) may have an adverse effect on the GID Canal System which is eligible for listing in the National Register of Historic Places. In 2015, Reclamation, the Montana State Historic Preservation Office, and the GID executed a Memorandum of Agreement (MOA) mitigating the adverse effect.

Although there are sites within the proposed project area that are eligible for inclusion in the National Register of Historic Places, it was determined that the proposed action may have an adverse effect on the GID Canal System, stipulations are in place in order to take into account the undertaking on historic properties. The November 11, 2015 MOA between Reclamation and the GID provides stipulations that the following measures will be carried out as agreed upon:

- GID will donate four original valves from the features to the Irrigation District Museum for interpretation and public display.
- GID has the option to utilize two of the four valves in the future as needed for replacement and maintenance purposes in the event other valves fail.

Cumulative Impacts

Cumulative effects are the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions (40 CFR § 1508.7). No significant cumulative impacts are expected as a result of the Proposed Action.

EXECUTIVE ORDERS

The J-Lake Improvement Project EA was prepared in consideration of the following laws, regulations, orders, and directives and standards. The Proposed Action would have no effect on:

- American Indian Religious Freedom Act of 1978 (PL 95-341)
- Archaeological and Historic Preservation Act (PL 93-291)
- Archaeological Resources Protection Act of 1979 (PL 96-95)
- Bald and Golden Eagle Protection Act (16 USC 668-668d)
- Clean Air Act of 1963 (42 USC 7401) and Amendments
- Clean Water Act of 1972 (33 USC 1251 et esq.), Sections 401, 402, and 404
- Consultation and Coordination with Indian Tribal Governments 2000 (EO 13175)
- Endangered Species Act of 1973 (16 USC 1531-1544)
- Environmental Justice of 1994 (EO 12898)
- Farmland Protection Act of 1981 (PL 97-98)
- Federal Energy Policy Act of 2005 (P. L. 109–58)
- Fish and Wildlife Coordination Act 1958 (16 USC 661-666c)
- Floodplain Management 1977 (EO 11988)
- Indian Scared Sites 1996 (EO 13007)
- Indian Trust Responsibilities 1995 (512 DM Chapter 2)
- Invasive Species 2016 (EO 13112)
- Montana Noxious Weed Law, MCA 7-22-2116
- Montana Code Annotated – Surface Water and Groundwater 2017 (MCA 85-2-301)
- Migratory Bird Treaty Act of 1918 (16 USC 703-712)

- National Environmental Policy Act of 1969 (42 USC 4321)
- Native American Grave Protection and Repatriation Act (PL 101-601)
- Protection and Enhancement of the Cultural Environment of 1971 (EO 11593)
- Wetland Protection Act of 1977 (EO 11990)

ENVIRONMENTAL COMMITMENTS

- The period of use for J-Lake is from April 1st to October 31st. All construction would be accomplished outside of the irrigation season while the Project Area is de-watered for the season.
- Construction will occur outside the nesting period of May 1st to July 15th to avoid areas of nesting bird habitat.
- The contractor will follow standard construction industry measures to minimize fugitive dust emissions created during construction activities. Any complaints that arise will be dealt with in a timely manner.
- To protect wildlife, travel will be restricted to existing roads, access routes and easements. Off-road travel shall be avoided where practicable. Roads will be maintained during construction.
- Implementation of the Proposed Action may require authorizations or permits from state and federal agencies. GID, their consultants, or the construction contractor will obtain all necessary permits for construction activities.
- All applicable soil and water BMPs will be implemented to prevent runoff of soil, silt and other debris.
- Erosion control measures will be employed as appropriate: Stabilization, erosion controls, restoration, and re-vegetation of all areas will be performed as soon as project is completed.
- Construction equipment will be inspected for the presence of petroleum leaks and noxious weed seeds. Corrective actions will be taken if inspections identify potential risks of contamination by either.
- If threatened or endangered species are identified and encountered during construction, all ground-disturbing activities in the immediate area will be stopped until Reclamation can consult with the USFWS to determine appropriate steps to avoid impacting the species.
- If potential historic properties are discovered or unanticipated effects on historic properties found, work would halt in the vicinity of the discovery until such time as the historic properties have been evaluated and addressed as appropriate, under the post review discoveries procedures set forth in 36 CFR Part 800.13b.

APPROVED:

Steven Davies — November 19, 2018

Area Manager — Date

Montana Area Office

Environmental Assessment
J-Lake Improvement Project

PROPOSED FEDERAL ACTION

The Bureau of Reclamation (Reclamation), in cooperation with the Greenfields Irrigation District (GID) propose to modify a feature of the Sun River Project for water conservation purposes. The J-Lake Improvement Project would increase efficiency within the Sun River system by allowing water previously stored at Gibson and Pishkun Reservoirs to be released to irrigable lands within the GID. More specifically, the proposed J-Lake Improvement Project would reduce water waste, while increasing the ability to deliver stored water to GID members.

The J-Lake Improvement Project Environmental Assessment (EA) may lead to a Finding of No Significant Impact (FONSI) if the responsible official decides the impacts of the action are not significant. If significant environmental impacts are identified, Reclamation would stop the EA process and may proceed with the preparation of an Environmental Impact Statement (EIS). Reclamation defines significance in accordance with 40 CFR 1508.27 in reference to context and intensity.

PURPOSE AND NEED

The purpose of the Proposed Federal Action is to improve water management within the GID by providing additional freeboard (transient storage). This would be accomplished through modifying and/or replacing existing structures and by increasing the storage capacity of J-Lake. Ultimately, this Project is being proposed to implement water conservation measures within the boundaries of the GID.

The Proposed Federal Action is needed to facilitate a greater efficiency in the beneficial use of the water diverted from the Sun River. The J-Lake Improvement Project would not result in increased irrigated acreage, or diversion of water, but is estimated to save 5,000 acre-feet of water diverted and stored annually. The Project would not change the point of diversion, place of use, place of storage, purpose, or use of Reclamation's existing water rights for the Sun River Project.

BACKGROUND

The Sun River Project was authorized in 1906 as a single purpose project – to provide irrigation water. The GID was established in 1926 to operate and maintain irrigation canals in the Greenfields division of the Sun River Project. The GID is one of two irrigation districts comprising the Sun River Project, encompassing about 83,230 acres of irrigated lands. The Fort Shaw Irrigation District, which contains about 14,714 acres of irrigated lands, comprises the second district. Operation and maintenance responsibilities have been transferred to both Districts in accordance with agreements with Reclamation. Project direct flow water rights are jointly held by Reclamation and the Districts, while storage rights are held solely by Reclamation.

Water held at J-Lake, a small feature on the GID main canal downstream of Pishkun Reservoir, is considered project water (natural flow, water at Gibson and Pishkun Reservoirs or return flows from within the GID). The intended function of J-Lake is to operate as a regulating reservoir within the GID to accommodate the canal system fluctuations due to changes in water use requirements and lag times up to 36 - 42 hours and 30 miles, associated with resulting flow adjustments elsewhere in the system. Operation of J-Lake requires close attention to existing conditions; experience, and foresight to anticipate future changes in water demand, up-district flow adjustments, and lag time associated with district-wide flow adjustments.

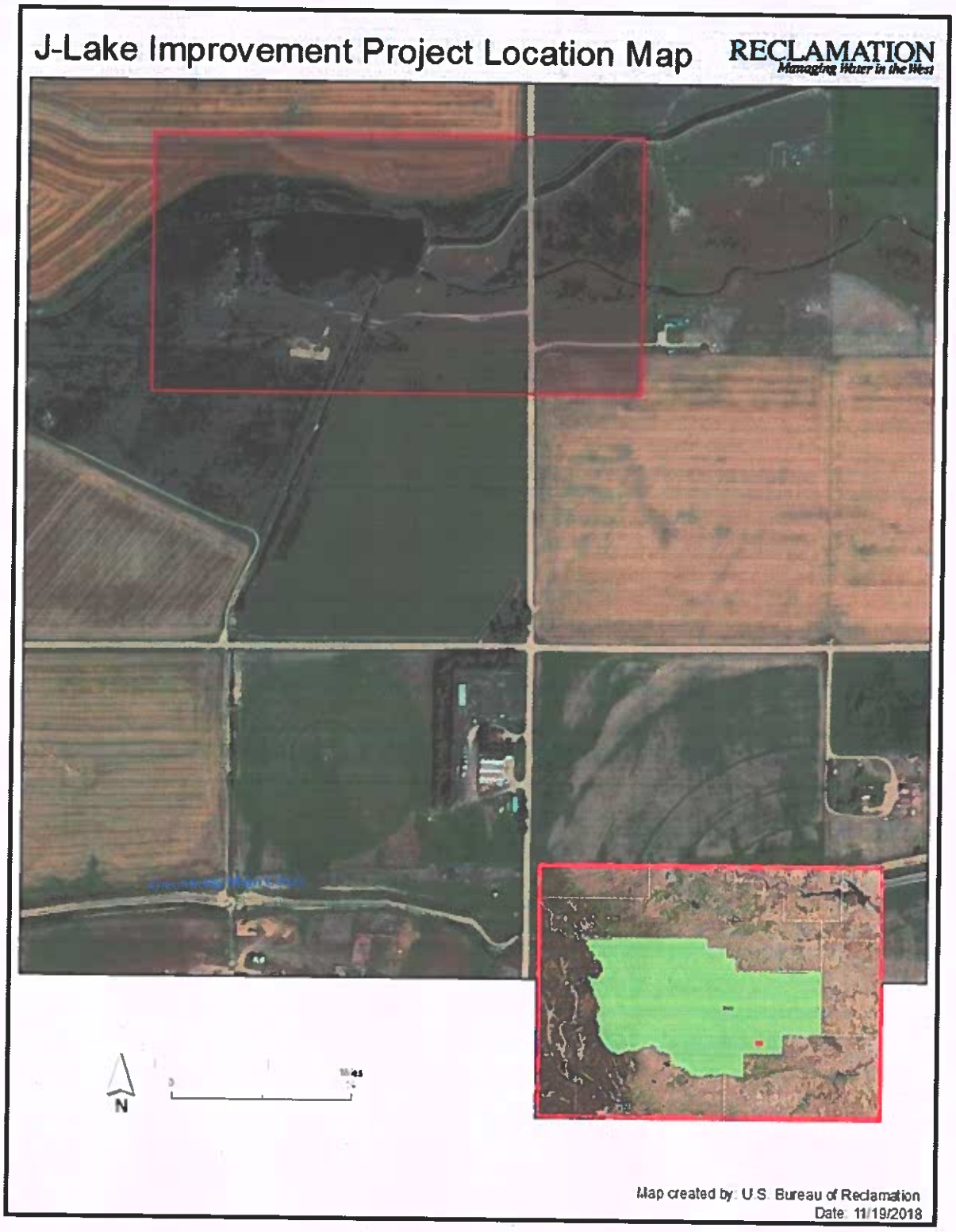
Existing Condition

J-Lake receives water from the Greenfields Main (GM) Canal through GM Lateral 100 (GM-100). J-Lake also receives water from Drain B, which collects drain water from irrigated land more than 7 miles up-gradient of the Lake. J-Lake has an outlet structure which provides and regulates flow out of the Lake into the remainder of GM-100. The J-Wasteway routes excess flows into Spring Coulee and Muddy Creek.

Although there is more than 5.5 feet from the invert elevation at lateral GM-100 outlet structure to the crest of the J-Wasteway overflow structure, two factors limit the existing range of water surface elevation in J-Lake, which in turn limits the usable storage in J-Lake. The limiting factors are as follows:

1. As currently configured, J-Wasteway limits the upper extent that J-Lake water surface elevation can rise because the wasteway spills all water through the structure to limit the water surface elevation to a maximum of 3,809.6 ft. The lower limit of water surface elevation in J-Lake is limited by the head required to meet flow requirements to downstream water users on lateral GM-100. Site indicators suggest that under limiting flow conditions (peak water demand, excessive vegetation, etc.), this elevation may be effectively the same as the elevation at which J-Lake spills into J-Wasteway. At lower flows, or when conveyance conditions in GM-100 are ideal, there may be the ability to fluctuate J-Lake water surface elevation to levels below the wasteway spill elevation and manage J-Lake to reduce/eliminate wasteway flows.
2. The J-Lake footprint limits the existing ability to efficiently manage water inflows/outflows. The existing footprint area of J-Lake is about 5.75 acres. If, as described above, water managers could reduce J-Lake water surface elevation to one foot below the wasteway spill elevation, this would result in 5.75-acre foot (AF) of usable storage. However, it only takes one day at 2.9 cfs (cubic foot/second) to fill 5.75 AF. This illustrates the degree to which water managers would have to precisely control inflows and outflows on a daily basis to prevent the J-Lake water surface elevation from dropping to a point where insufficient head were available to convey the required water to GM-100 water users or avoid spilling excess water into the wasteway.
3. Within the GID, individual water users can order water with 48-hours advance notice or cancel water deliveries from the district with 24-hours advance notice. Often, the orders or cancellations come too late for the operators to balance flows in the ditch systems, which results in waste-water spills to Spring Coulee and Muddy Creek.

Project Location Map



The Proposed Project is located in Teton County, MT, within the SE1/4, Section 14, T22N, R2W.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the GID would continue to operate under existing conditions. An excess of water (approximately 5,000 AF annually) would not be conserved, rather it would continue to spill waste flows into Spring Coulee and the tributaries of Muddy Creek.

PROPOSED ACTION ALTERNATIVE

The Proposed Action Alternative would implement water conservation measures within the boundaries of the GID. The J-Lake Improvement Project would consist of the following actions:

1. Remove existing GM-100 outlet and J-Lake wasteway structures;
2. Install modern automated GM-100 outlet (gates) and J-lake wasteway structures;
3. Raise berm around north and east perimeter of J-Lake to increase storage capacity, which would then be released in to GM-100 for more efficient water delivery.
4. Construction activities include earthwork, final grading, concrete work and prep, metal fabrication and installation, electrical and control system installation, and installation of new canal gates.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the existing conditions and potential impacts for resources which may be affected by the J-Lake Improvement Project. The affected environment includes the existing communities, land, water, and biological resources that might be affected. Only those resource areas that would potentially be affected by the Proposed Action are discussed in detail. The area of potential impacts (affected area) is resource-specific and is defined in each resource discussion. The boundary of the affected area for each resource extends to where effects can be reasonably and meaningfully measured.

Sun River Watershed

The Sun River is the second largest tributary of the Missouri River between Canyon Ferry and Fort Peck dams, its headwaters originate within the Bob Marshall Wilderness. The upper tributaries converge at Gibson Reservoir located in the Sun River Gorge. Downstream from Gibson Dam, the river flows to the Sun River Diversion Dam impoundment where water is conveyed to Pishkun Reservoir and Willow Creek Reservoir. Water from Pishkun enters the Sun River Slope Canal and out to several main canals that comprise the GID. The mainstem of the Sun River flows east to its confluence with the Missouri River at Great Falls. The Sun River contains about 1,176 miles of perennial streams. Major tributaries include the North and South forks, Willow, Elk, Mill Coulee and Muddy Creek.

Muddy Creek, a source of concern within the Project Area, is approximately 42-miles long and drains about 314 square miles. It makes up 17% of the Sun River basin but currently contributes over 80% of sediment load. Muddy Creek lies within the Proposed Project Area and is of major concern since it is listed on the Montana Department of Environmental Quality's (DEQ) 303(d) list for impaired water quality because it exceeds total maximum daily loads (TMDLs) for several pollutants. Muddy Creek receives water from J-Lake via the J-Lake wasteway, which is a major contributor to its 303(d) status.

WATER QUALITY

As mentioned above, Muddy Creek is listed as an impaired water as identified by the DEQ. The 2004 TMDL identifies source pollutants to the Creek as: suspended solids, *nutrients*, thermal modification, and salinity/TDS/sulfates/pH. This TMDL designation prompted local groups to take action.

In 2005 and 2006 water quality samples were collected from the Upper Sun River, which indicated that nitrogen and phosphorus levels had dropped below target levels. As a result, DEQ removed the 80-mile long impaired segment of the Upper Sun River from the 303(d) list for *nutrients* in 2006. This success story was a result of applied agricultural Best Management Practices (BMPs) to improve irrigation efficiencies (EPA 841-F-07-001Y), and a direct result of cooperating agencies working together to promote and enhance quality of life and natural resources within the watershed. The other probable cause pollutant TMDLs remain for impairment.

Water quality concerns addressed in the 2013 Sun River Watershed Restoration Plan identify the need for improvements to Muddy Creek from its headwaters to the mouth of the lower Sun River.

- Sediment loading in the lower Sun River is almost exclusively the result of upstream sources in the upper Sun River and Muddy Creek. Implementation of sediment reduction measures upstream would address sediment-related impairments in the lower Sun River.
- The Plan also identified the need to modify J-Lake to reduce sediment into the Sun River; specifically, "measures might include automating irrigation ditch monitoring, management to reduce irrigation return flows, and Installing head gates that could be fully controlled."

No Action Alternative

Under the No Action Alternative water quality would not improve. Water quality impacts would remain consistent with current impacts, as irrigation use would continue within the GID. It is likely that the existing condition would worsen over time, causing increased erosion and sedimentation, pollutant loads, and thermal modification to Muddy Creek and its tributaries.

Proposed Action Alternative

The Proposed Project would result in direct improvements to water quality within Muddy Creek, Sun River, and finally the Missouri River. Water conservation benefits of the Proposed Action would include reduced erosion/deposition to Spring Coulee and Muddy Creek. This would be accomplished by controlling flows via automated GM-100 outlet and J-lake wasteway structures.

Benefits to Water Quality under the Proposed Action include:

1. The reduction in sediment to Muddy Creek and its tributaries would move in a positive trend toward meeting sediment quality standards identified in the TMDL for Muddy Creek and the Sun River.
2. A reduction in sediment and turbidity would provide enhanced habitat for riparian and aquatic species, as well as water fowl and other wildlife species.

WATER QUANTITY

As mentioned above, J-Lake receives water from the GM Canal through the GM-100. J-Lake also receives water from Drain B. Direct precipitation and evapotranspiration are other sources of water gain and loss. The Agrimet Station GFMTmeasures evapotranspiration; its emphasis is on irrigation management – applying the right amount of water at the optimal time. Data from the GFMT station was utilized to account for change in storage in J-Lake during operational periods. In addition, the US Geologic Survey (USGS) station 06085800 at Simms, MT was utilized to track

water flow within the Sun River. These tools were used to calculate inflow/outflow within the system to evaluate J-Lake for optimization of the water resource.

The Sun River Watershed Restoration Plan (2013) identifies water quantity concerns in Muddy Creek. Corrective actions include reducing creek flows to below 150cfs to reduce erosion (desired long-term goal – 130cfs). Currently, during storm surges stream flows reach upward of 2,500 cfs, (USGS 0608900) resulting in sediment loading to Spring Coulee and Muddy Creek. Likewise, during times of water shortages, flows drop well below the desired bare minimum of 50 cfs limiting irrigation water.

No Action Alternative

Under the No Action Alternative existing water use would continue. The GID would continue to utilize J-Lake for irrigation water storage and delivery to water users. Water loss would continue through seeps and leakage of existing structures. Storm surges would continue to erode banks and deposit sediment into Spring Coulee and Muddy Creek. Moss and other undesirable vegetation would continue to impede the flow of water during irrigation season. The conservation of approximately 5,000 AF of water annually would not be achieved.

Proposed Action Alternative

Approximately 5,000 AF would be conserved from improved water management with 50% savings to be left in the Sun River, thus increasing flows by approximately 10 cfs. This 10 cfs is crucial when current river flows reach as low as 30 cfs, which is nearly half of the desired bare minimum flows of 50 cfs that the watershed partners are trying to maintain.

Benefits to the Water Quantity under the Proposed Action include:

1. Potential water savings through reductions in leaks and seepage.
2. Conservation of approximately 5,000 AF annually by more efficient release of water through the GM-100 delivery system.
3. Impoundment/gate control would allow better regulation of water flow.
4. The 5,000 AF of irrigation water would help meet current GID shortages and augment Sun River in-flow needs.
5. Reduction in operational costs by providing a more efficient system.
6. Improved water supply/delivery would reduce the amount of vegetation present in the GM-canal, which would result in more efficient water delivery, decreased treatment cost, and less chemical usage.

FISHERIES

According to the Montana Statewide Fisheries Management Plan, 15 species of fish have been sampled in the Sun River. Below the Sun River Diversion Dam, anglers fish primarily for rainbow and brown trout. This fishery tends to be seasonal in nature, likely due to factors associated with irrigation water management, drought, and water temperatures. Below the confluence of Muddy Creek, and for the remaining 17 miles, there is excessive silt deposition. Approximately 80-90% of the sediment load of the Sun River at its mouth originates from Muddy Creek, caused by return flows of the Sun River Project's GID. The lower two-thirds of this reach is a major recharge area of return flows and surplus diverted irrigation water. Some tributary streams in the lower portion of the drainage transport these return flows and can function as valuable refuges providing cooler water habitat during critical times of the year.

No Action Alternative

Under the No Action Alternative sediment would continue to surge into Spring Coulee and Muddy Creek. Excessive silt deposition would remain, continuing to alter the substrate preventing desirable riparian habitat from forming, as well as limiting fish habitat.

Proposed Action Alternative

The Proposed Action Alternative would improve conditions in Muddy Creek by decreasing sediment and reducing nutrients. The Proposed J-Lake Improvement Project, coupled with ongoing efforts of the Sun River Watershed Group (SWRG) and the GID (and other interest groups) would result in a positive trend toward improving Muddy Creek and reducing TMDL allocations. Although limited fisheries resources are located within the proposed project area, cumulatively, the project would provide an overall benefit to fishery resources within the Sun River Drainage

THREATENED AND ENDANGERED SPECIES

The action area for Threatened and Endangered Species is identified based on the potential direct and indirect effects of the Proposed Project to federally listed species (50 CFR 402.02). For the J-Lake Improvement Project, the action area consists of all areas where direct project impacts are proposed to occur.

According to the October 23, 2018 Endangered, Threatened, Proposed and Candidate Species for Montana Counties, the US Fish and Wildlife Service (USFWS) lists six species that may occur within Teton County. The designations are as follows:

Scientific Name	Common Name	Status
Lynx Canadensis	Canada Lynx	LT,CH
Calidris canutus rufa	Red Knot	LT
Charadrius melodus	Piping Plover	LT
Ursus arctos horribilis	Grizzly Bear	LT
Gulo gulo luscus	Wolverine	P
Pinus albicaulis	Whitebark Pine	C

Canada lynx, a listed threatened species, can be found in Teton County along the Rocky Mountain Front, primarily in high elevation subalpine habitat. Lynx are most likely to persist in areas that receive deep snow and have high-density populations of snowshoe hares. Although lynx could be found within Teton County, the project area does not contain suitable or critical habitat (CH). Therefore, the proposed project would not impact Canada lynx or critical habitat for the lynx.

Red knot, a listed threatened species, occasionally make migratory stopovers in Montana at larger wetland areas. The majority of documented stopovers have been at Freezeout Lake, Benton Lake National Wildlife Refuge, and Lake Bowdoin National Wildlife Refuge. Most of these documented sightings occur in May during the northward migration. The project area does not contain suitable wetland habitat for the red knot, therefore, it is unlikely that they would be found within the project area. The proposed project would not impact the red knot, nor cause a decline in its habitat.

Piping Plovers, a listed threatened species, primarily select unvegetated sand or pebble beaches on shorelines or islands in freshwater and saline wetlands. Open shorelines and sandbars of rivers and large reservoirs in the eastern and north-central portions of the state provide prime breeding habitat for piping plover. The proposed project area may provide limited habitat for the plover, but the area does not contain designated "Critical Habitat Units," meaning that it would be unlikely that they would be found within the project area. The proposed project would not impact the piping plover, nor lead to a decline in habitat.

The grizzly bear is part of the Northern Continental Divide Ecosystem (NCDE) population, which contains the largest grizzly population in the US. In general, grizzly habitat requirements are determined by large spatial needs for omnivorous foraging, winter denning, and security cover. Large roadless areas are ideal as year-round grizzly habitat, although transient bears are known to wander into human populated areas. The search for food has a prime influence on grizzly bear movements. It is unlikely, but not impossible that a transient bear may wander to the project area. Despite this, the proposed project would not impact the listed threatened grizzly bear or cause a decline in its population or habitat as they are not known to occupy the area.

The wolverine, a species proposed for listing, prefers mountain forest types, such as those found in the western portion of Teton County along the Rocky Mountain Front. Wolverine are solitary and wide-ranging and typically found at high elevations with scattered timber - they avoid clearcuts and burned areas. It is unlikely that the wolverine would be found within or near the project area since there is no suitable habitat. Therefore, the proposed project would not impact the wolverine.

Whitebark Pine is a candidate species in Teton County. The whitebark pine is an evergreen tree that is typically found in subalpine habitat at high elevations in west-central Montana. The proposed project is located at lower elevation on agricultural land. There is no whitebark pine or suitable habitat within or near the project area. Therefore, the proposed project would not impact whitebark pine or cause a decline in its habitat.

No Action Alternative

The No Action Alternative would have no effect on the Canada lynx, red knot, piping plover, grizzly bear, wolverine, or whitebark pine, as none of these species are known to occupy the Project Area.

Proposed Action Alternative

The Proposed Action Alternative would have no effect on the Canada lynx, red knot, piping plover, grizzly bear, wolverine, or whitebark pine, as none of these species are known to occupy the Project Area.

CULTURAL RESOURCES

Reclamation conducted a cultural resource inventory of the Area of Potential Effects in 2014 – *Class III Cultural Resources Inventory of Greenfields Irrigation District J-Lake Wasteway Project, Teton County, Montana*. This report documents the determination that the undertaking (Proposed Action) may have an adverse effect on the GID Canal System which is eligible for listing in the National Register of Historic Places. In 2015, Reclamation, the Montana State Historic Preservation Office, and the GID executed a Memorandum of Agreement (MOA) mitigating the adverse effect

Reclamation has provided federal funding for the undertaking thereby making the project an undertaking subject to review under Section 106 of the National Historic Preservation Act. Reclamation conducted a cultural resource inventory of the Area of Potential Effects in 2014 and determined the undertaking may have an adverse effect on the GID Canal System which is eligible for listing in the National Register of Historic Places. In 2015, Reclamation, the Montana State Historic Preservation Office, and the GID executed a Memorandum of Agreement (MOA) mitigating the adverse effect. The duration of the MOA is for five years from Reclamation's filing date of December 4, 2015 with the Advisory Council on Historic Preservation.

No Action Alternative

There would be no effect to historic properties under the No Action Alternative. Historic structures within the Project Area would remain in place and continue to deteriorate over time.

Proposed Action Alternative

The Proposed Action Alternative may have an adverse effect on the GID Irrigation System which is eligible for listing in the National Register of Historic Places. Reclamation, the SHPO, and GID agree that the undertaking shall be implemented in accordance with the following stipulations in order to take in to account the effect of the undertaking on historic properties.

- GID will donate four original valves from the features to the Irrigation District Museum for interpretation and public display.
- GID has the option to utilize two of the four valves in the future as needed for replacement and maintenance purposes in the event other valves fail.

EXECUTIVE ORDERS

If the Proposed Action Alternative is selected, it would be accomplished in accordance and compliance with the following laws, regulations, directives and standards:

- American Indian Religious Freedom Act of 1978 (PL 95-341)
- Archaeological and Historic Preservation Act (PL 93-291)
- Archaeological Resources Protection Act of 1979 (PL 96-95)
- Bald and Golden Eagle Protection Act (16 USC 668-668d)
- Clean Air Act of 1963 (42 USC 7401) and Amendments
- Clean Water Act of 1972 (33 USC 1251 et esq.), Sections 401, 402, and 404
- Consultation and Coordination with Indian Tribal Governments 2000 (EO 13175)
- Endangered Species Act of 1973 (16 USC 1531-1544)
- Environmental Justice of 1994 (EO 12898)
- Farmland Protection Act of 1981 (PL 97-98)
- Federal Energy Policy Act of 2005 (P. L. 109–58)
- Fish and Wildlife Coordination Act 1958 (16 USC 661-666c)
- Floodplain Management 1977 (EO 11988)
- Indian Scared Sites 1996 (EO 13007)
- Indian Trust Responsibilities 1995 (512 DM Chapter 2)
- Invasive Species 2016 (EO 13112)
- Montana Noxious Weed Law, MCA 7-22-2116
- Montana Code Annotated – Surface Water and Groundwater 2017 (MCA 85-2-301)
- Migratory Bird Treaty Act of 1918 (16 USC 703-712)
- National Environmental Policy Act of 1969 (42 USC 4321)
- National Historic Preservation Act of 1966 (PL 89-665), as amended 1992 (PL 102-575)
- Native American Grave Protection and Repatriation Act (PL 101-601)
- Protection and Enhancement of the Cultural Environment of 1971 (EO 11593)
- Wetland Protection Act of 1977 (EO 11990)

CUMULATIVE IMPACTS

Cumulative effects are the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions (40 CFR § 1508.7). As required by NEPA, Reclamation has prepared this assessment in consideration of cumulative impacts related to the alternatives considered in the EA.

As stated previously, the Sun River Project was authorized in 1906 as a single purpose project – to provide irrigation water. The GID was established in 1926 to operate and maintain irrigation canals in the Greenfields division of the Sun River Project. Cumulatively, these actions and associated activities have altered the landscape and the Sun River Watershed. However, the Proposed J-Lake Improvement Project, coupled with ongoing efforts of the SWRG and the GID (and other interest groups) would result in a positive trend toward improving existing conditions within the watershed.

No Action Alternative – Cumulative Impacts

The No Action Alternative would result in cumulative impacts over time. Ongoing irrigation and farming and ranching activities would continue within the project area. Inefficient delivery of water to the GID would continue. Water quality standards would not be met in Muddy Creek or the Sun River, and TMDL measures would remain in effect. J-Lake structures would continue to decline over time, consuming natural resources and increasing operational costs.

Proposed Action Alternative – Cumulative Impacts

Under the Proposed Action Alternative, temporary direct impacts would include increased traffic, noise, dust, and vehicle emissions. BMPs would be employed to reduce the sort-term impacts. Construction noises may temporarily displace wildlife that inhabit the area, but they would return to favorable conditions upon completion of construction activities. The Proposed Action would provide long-term improvements for biological species and their associated habitats. The minor, short-term impacts would be offset by the long-term benefits of the Proposed Action.

Minimization Measures

The following BMPs and minimization measures would be implemented to avoid, reduce, or eliminate impacts which may otherwise result from construction and implementation of the Proposed Action Alternative.

- The period of use for J-Lake is from April 1st to October 31st. All construction would be accomplished outside of the irrigation season while the Project Area is de-watered for the season.
- Construction will occur outside the nesting period of May 1st to July 15th to avoid areas of nesting bird habitat.
- The contractor will follow standard construction industry measures to minimize fugitive dust emissions created during construction activities. Any complaints that arise will be dealt with in a timely manner.
- To protect wildlife, travel will be restricted to existing roads, access routes and easements. Off-road travel shall be avoided where practicable. Roads will be maintained during construction.
- Implementation of the Proposed Action may require authorizations or permits from state and federal agencies. GID, their consultants, or the construction contractor will obtain all necessary permits for construction activities.
- All applicable soil and water BMPs will be implemented to prevent runoff of soil, silt and other debris.
- Erosion control measures will be employed as appropriate: Stabilization, erosion controls, restoration, and re-vegetation of all areas will be performed as soon as project is completed.
- Construction equipment will be inspected for the presence of petroleum leaks and noxious weed seeds. Corrective actions will be taken if inspections identify potential risks of contamination by either.

- If threatened or endangered species are identified and encountered during construction, all ground-disturbing activities in the immediate area will be stopped until Reclamation can consult with the USFWS to determine appropriate steps to avoid impacting the species.
- If potential historic properties are discovered or unanticipated effects on historic properties found, work would halt in the vicinity of the discovery until such time as the historic properties have been evaluated and addressed as appropriate, under the post review discoveries procedures set forth in 36 CFR Part 800.13b.

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